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Submission date: 15-Feb-2019 09:17AM (UTC+0700)
Submission ID: 1078461218
File name: ijmess.compress.pdf (267.59K)
Word count: 5812
Character count: 35131

International Journal of Management, Economics and Social Sciences
2015, Vol. 4(2), pp.58 – 70.
ISSN 2304 – 1366
http://www.ijmess.com

Accounting Information Systems Alignment and SMEs Performance: A Literature Review

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This paper explored the empirical research investigating the relationship between Accounting Information Systems (AIS) alignment and Small and Medium Enterprises (SMEs) performance. Literature shows that AIS alignment is influenced by organizational characteristics, individual characteristics and situational factors which affect SMEs performance. The associate between AIS alignment and firm performance is also discussed in this paper. This paper explores the motivation and contribution of previous researches to identify the gaps for the future studies.

Keywords: Accounting information systems, alignment, small and medium enterprises, firm performance, organizational characteristics, individual characteristics

JEL: L86, M15, M41

This paper investigates the empirical studies examining the relationship between Accounting Information Systems (AIS) alignment and performance in Small and Medium Enterprises (SMEs). Hussin *et al.*, (2002) found that there is a relationship among owner commitment, information technology (IT) sophistication, external IT expertise, and information systems (IS) alignment, while Ismail and King (2006) found that information systems alignment has a significant impact on firm performance. This paper discusses previous researches that explain SMEs performance and the factors influencing performance of SMEs.

Previous studies have attempted to explain the relationship between AIS and SMEs performance (Boulianne, 2007; Francalanci and Morabito, 2008). Hussin *et al.*, (2002) and, Ismail and King (2007) explain determinant of information systems implementation such as IT sophistication, owner commitment, and IT strategy on AIS alignment in SMEs. The studies on technological implementation in SMEs are more interesting than those in large firms. Although research on IT and performance has been conducted in large firms, it is important for small firms, since the implementation of technology will improve small firm performance (Grande *et al.*, 2010). Both small firms and large firms have implemented AIS (Ismail and King, 2006). However, the development of IT in large firms cannot be equally applied to small firms (Thong, 1999).

The writer included a list of previous researches investigating AIS and performance in the Appendix-I of this paper. Some researchers have attempted to associate AIS with

Manuscript received January 30, 2015; revised April 25, 2015; accepted May 10, 2015.
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performance. The relationship between AIS sophistication and firm performance was investigated by Burca *et al.*, (2006); studies present a positive relationship among level of technology (Choe, 2002); AIS strategy (Boulianne, 2007; Tuanmat and Smith, 2011), and IT investment (Dibrell *et al.*, 2008).

Previous research has found the indirect effect of IS on performance. Burca *et al.*, (2006) posited that the relationship between service practices and service performance is moderated by IT sophistication. Dibrell *et al.* (2008) suggested that the investment of IT has the moderating effect between the relationship of innovation and performance. Naranjo (2004) stated that there is an indirect effect of sophisticated AIS on performance, acting through a prospector strategy. Moreover, several studies identify IT alignment (Hussin *et al.*, 2002) and relationship between IT alignment and firm performance (Ismail and King 2005; 2006).

The main problems faced by small firms are the lack of capital and technological obsolescence (Malaranggeng, 2009), limited financial resources, management information (Levy, *et al.*, 2011), limited scale economies and management' s IT-oriented behaviour (Francalanci and Morabito, 2008; Marriott and Marriott, 2000), and lack of funds to improve skills (Delone, 1988). Based on explanation above, in general, this paper will contribute to the academic literature by finding the relationship, direct or indirect, between the antecedent factors of IS implementation and performance. This paper will direct researchers to examine the results of previous research that can be examined by using different methods and variables in the future.

This paper has two purposes. First, it attempts to document empirical researches on AIS. Second, it aims to identify research gap related to SMEs performance as a basis of an empirical future research. To achieve this purpose, the first section of this paper will explain previous researches conducted in different countries, different measurements and methods; the second section will discuss several factors that influence AIS alignment; the mapping of research findings would be explained in the last section. This paper is expected to provide input to the SMEs owners in order to identify factors that affect technology implementation. SMEs owners should be aware that the implementation of appropriate information technology will improve performance which will be resulted in competitive advantage.

LITERATURE REVIEW

IT in Different Countries

This section would discuss about previous finding in many developing countries in context of AIS implementation and SMEs performance. In general, AIS implementation is determined by several factors such as level of strategy, owner commitment, and external IT expertise, which have an effect on firm performance. However, several studies have attempted to explain the effect of IT/AIS alignment on SMEs performance.

Thong (1999) studies 166 SMEs in Singapore. The study developed an integrated model of IS implementation in SMEs. The model uses several factors which affect IS adoption such as decision

maker characteristic, Information System characteristic, organizational characteristic, and environmental characteristics. The result shows that SMEs with certain CEO characteristics (innovativeness and level of IS knowledge), innovation characteristics (relative advantage, compatibility, and complexity of IS), and organizational characteristics (business size and level of employee's knowledge in IS) are more likely to adopt IS.

The study conducted by Hussin *et al.* (2002) focused on the alignment of business strategy and IT strategy among 256 managers of small manufacturing firms in the UK SMEs. A questionnaire survey was used to gather data to test the hypotheses. The study indicates that IT alignment is related to the firm's level of IT maturity and the level of CEO's knowledge of software, but it does not seem to be linked to the firm's sources of external IT expertise. Thus, more mature firms are more likely to be able to rely on their own knowledge to fix IT for their needs, especially as engaging outside expert is fraught with problems. Similarly, Sousa *et al.* (2006) analysed performance measurement in 52 SMEs in UK. The data collected from the survey suggest that there are no significant differences in the use of performance measurement in SMEs which engage in industry and service sector. Training of employee and difficulty of defining new performance measurement were highlighted as the most important barriers to the adoption of the new performance measurement.

The evidence found in Malaysia by Ismail and King (2005; 2006; 2007) reveals that the fit between the requirement for accounting information systems and the capacity of accounting information systems in Malaysian SMEs was high. This suggests that aligning information processing capacity with perceived information requirements has a contribution in improving the performance of SMEs in developing economies. Therefore, government intervention is crucial to accelerate the strategic use of IT, therefore SMEs really need to implement the informational technology to add firm value. In addition, the different research setting between IT and organizational performance in Malaysian SMEs has been documented by Tuanmat and Smith (2011) who examined the effect of competitive environment, information technology, and organizational strategy on organizational performance. Using contingency approach, the study found that SMEs have changed their business strategy and IT strategy, which has affected their organizational performance.

A study conducted by Boulianne (2007) stated that match between type of strategy and AIS is associated with higher performance in Canadian SMEs. The study formulates three types of strategy variables; defender, prospector and analyser. Matching this strategy and AIS will affect firm performance. The results of the study show that managers who apply the prospector and defender strategy need external, non-financial, and future-oriented information for decision making.

The adoption of technology in Japan SMEs was investigated by Isobe *et al.* (2008). The purpose of the study was to investigate the relationship between technological capabilities and firm performance. The study divides

technological capabilities into two types: refinement capability, which improves the existing asset portfolio; and reconfiguration capability, which involves the restructuring of the asset portfolio. The results of an analysis of 302 SMEs in Japan suggest that reconfiguration capability is more positively related to firm performance than to refinement capability.

Another research using Canadian firms sample has been presented by Croteau and Raymond (2004). The study evaluates the business performance outcome in aligning an organization's IT competencies with its strategic competencies. The strategic competencies include components such as shared vision, cooperation, empowerment, and innovation, whereas IT competencies comprise connectivity, flexibility, and technological scanning. A questionnaire was addressed to 104 CEO of the firms in Canada. The results confirm that strategic and IT competencies alignment significantly enhances perceived business performance. The concept of competencies alignment implies that there is a strategic link between strategy and IT competencies with organizational requirements and organizational development.

Levy *et al.* (2011) employed a qualitative and quantitative analysis on the sample of 27 CEOs in SMEs. The study seeks to understand how strategic IS alignment takes place in SMEs. The results of the study are: first, that benefit realisation depends on alignment between IS and business strategy; second, that IS investment is frequently limited to supporting operation and transaction; third, that organizations with more sophisticated IS tend to perform less successfully than those with less complex systems, the greatest alignment and highest performance are reported for systems to improve efficiency.

A study on IS implementation in India has been conducted by Sharma and Bhagwat (2003). They measured and evaluated IS performance from six perspectives; operational efficiency of IS function, downtime of IS, responsiveness of IS, timeliness of information, accuracy of information, and overall competitive position. This cross-sectional survey was based on a questionnaires and personal interviews of 147 Indian SMEs. The results suggest that IS performance measurement framework can be the foundation for SMEs strategic growth in the globalization. The proper management of IS and its performance measurement are necessary for SMEs that want to remain competitive in global economy.

IT implementation in SMEs of Spain has been documented by Estebanez *et al.* (2010). They report that the manufacturing sector has high level of short term IT implementation, while the service sector use IT intensively and is very interested in sophisticated IT. The research studied the sample of 632 companies selected from the Iberian balance sheets Analysis database. From the total number of firms replied to the survey, 96 percent were medium-sized and the remaining 4 percent were small businesses. Furthermore, the study found that new accounting standard implementation and IT knowledge are the factors that align strategies with organizational culture towards continuous improvement. Another study in Spain,

documented by Naranjo (2004), found a relationship between sophistication of IS and hospital performance. The relationship was explored using data collected from 112 CEOs in 218 hospitals. The finding proved the indirect effect of sophisticated AIS on performance, acting through a prospector strategy.

The result of above mentioned studies showed that IS has a significant relation with SMEs performance. However, according to the information processing (IP) theory (Galbraith, 1973), IS processing capacity must match with information requirements. The Fit between information processing capacities with information requirements will affect SMEs performance (Ismail and King, 2006). Based on the IP theory and the finding of previous research, this paper proposes to correlate several factors such as the information systems characteristic (Thong, 1999), type of industry (Sousa *et al.*, 2006) and type of strategy (Bouliane, 2007) with information system implementation. To explain the relationship between the types of industry, the type of strategy with non-financial performance through the implementation of technology, contingency theory can be used.

METHODOLOGY

The effect of AIS implementation on organizational performance has been studied by several researchers using different analytical methods. Thong (1999) tested the hypothesis how to adopt IS by using discriminant analysis. Discriminant analysis is a technique to study the differences between two groups (IS adoption and non-IS adoption). Furthermore, Hussin *et al.* (2002) examined the IT alignment with factorial analysis. Another study, Soudani (2012) used regression analysis to establish the relationship between AIS and financial performance. However, Naranjo (2004) used two ways ANOVA analysis to match the dominant strategy, dominant AIS sophistication design with organizational performance. Estebanez *et al.* (2010) used chi-square statistic to determine differences in the use of IT between the SMEs engaged in manufacturing and those in service sectors. While Tuanmat and Smith (2011) used different statistical analysis in which Structural Equation Modelling (SEM) was used as the statistical technique to test the hypothesized model in their study.

This paper proposes to examine the various factors that affect technology implementation such as IS characteristic, types of strategy, types of industry with AIS alignment and the direct effect of AIS alignment on non-financial performance. Indirect effect or mediation relationship between types of strategy, types of industry on AIS implementation and non-financial performance can be analysed with structural equation modelling. The effect between each variable in AIS implementation and SMEs performance is still interesting topic for future research.

Measurement

Thong (1999) has developed an integrated model of IS adoption. In his research, IS adoption has been defined as using computer hardware and software application to support operation. He used 5 point Likert-type questions to measure the implementation of IS. Other studies like

Estebanez *et al.* (2010) and Soudani (2012) also used questionnaire to measure AIS implementation with 5 point Likert-scale. The measurement includes financial reporting process, data storage, data processing quality, and manager' s knowledge of new IT adoption. Other researchers also use questionnaire to collect data (Hussin *et al.*, 2002; Ismail and King, 2005, 2006; Bouliane, 2007; Isobe *et al.*, 2008).

Moreover, Hussin *et al.*, (2002) proposed the moderation model to measure IT alignment. He argued that high degree of alignment means high multiplication score between the IT strategy items ratings and the business strategy items ratings. Similarly, Ismail and King (2005, 2007) adopted the moderation approach to measure the fit between AIS requirement and AIS capacity. Fit relies on the close correspondence between 19 AIS requirement items and 19 AIS capacity items. According to Chenhall and Morris (1986), the design of AIS can be classified into 4 dimensions, namely scope, aggregation, integration, and timeliness. Furthermore, Ismail and King (2006) suggested different method to measure AIS alignment. In their study, the fit between AIS requirement and AIS capacity (referred to AIS alignment) is explored as a construct using the matching approach.

FACTORS AFFECTING IS IMPLEMENTATION

Some researchers stated that the implementation of IS can be determined by several independent factors such as; sophistication of IS, owner commitment to IS, external IT expertise, and level of IS. This section would explain factor affecting the implementation of IS as suggested in the previous researches.

Sophistication of IS

Naranjo (2004) suggested that organizations design sophisticated AIS to meet the strategic goals and enhance their performance. In his research, the design of sophisticated AIS was measured by 4 dimensions; scope, timeliness, aggregation, and integration. Burca *et al.* (2006) found that IT sophistication is a moderating variable that affects the relationship between service and performance. They suggest that a firm needs sophisticated technology due to: first, a business requires strong scientific technical base; second, new technologies can quickly make existing technology become obsolete. Estebanez *et al.* (2010) studied IT adoption in SMEs. The study found that SMEs in service sector use IT intensively and also very interested in IT sophistication. Al-Egab and Ismail (2011) stated that IS design is determined by environmental conditions. The results of the study revealed a significant and positive relationship between IT sophistication and AIS design. The sophisticated technology will provide a sufficient quantity of information for accountant; it gives information that can be used when designing AIS.

Organizational Characteristics

Literature shows that organizational characteristics also influence the implementation of technology (Thong, 1999). Thong included business size, competitive environment, and information intensity, all of which are important factors that affect IT adoption in small businesses. Ismail and King (2007) tested the effect of IT adoption in small and large firms. The results showed that there are significant differences between large and small firms in the

implementation of technology. Moreover, another research (Tuanmat and Smith, 2011) found that in a changing environment, market becomes more competitive, and small firms should invest in IT to compete in globalization environment. Thong (1999) argued that businesses in different sectors have different information processing needs, and those in less information intensive sectors are more likely to adopt IT than those in more information intensive sectors.

Business Strategy

Al-Egab and Ismail (2011) revealed that business strategy (consists of cost leadership and innovative differentiation) has a significant influence on AIS design. A small firm needs competitive advantage by adopting cost leadership strategy to know whether the features are acceptable to organization or IT team to avoid inconsistency in the next business process. However, similar to cost leadership strategy, the innovation differentiation strategy can only be planned and implemented effectively via sophisticated AIS design.

Levy *et al*. (2011) stated that to achieve the efficiency, SMEs need an IT strategy that is aligned to their business strategy. Alignment between IT strategy and business strategy will support their operation and transaction. Organizations with more sophisticated IT tend to perform their business less successfully than those with less complex systems. The efficiency would be achieved if the firms have highest alignment and good performance.

Tuanmat and Smith (2011) used strategy as a determinant factor that affects SMEs performance. In an uncertain environment, where markets become more competitive, SMEs should adopt strategies and consider investment in IT to deal with a variety of customers. Organizations should change their strategy to accommodate the change in environmental factors. The success in matching the strategy with the environment can enhance an organization's performance.

Owner Commitment

Delone (1988) argued that the owner of a firm is the key to the IT implementation. In a firm where the owner is familiar with, and involved in IT, the IT implementation will be more successful. Thong (1999) showed that one of the main factors contributing to the adoption of IS is owner's knowledge of IT. In order to survive, SMEs owners need to update accounting information for decision making accurately and timely. The adoption of accounting information would ensure proper accounting practices as good accounting practices have some implications for SME managers (Lohman, 2000; Amidu *et al*., 2011). Chu (2009) reported that most SMEs are family firms in his research sample. The SMEs which are owned by family members play significant role in technology innovation than non-family owned firms. In small firms, the owners will be more responsible for the development of information and technology to improve organizational performance.

External IT Expertise

Thong (1995) argued that the success of IT implementation is most likely to occur when external IT experts work as a team with senior managers to integrate information. This cooperation can improve business efficiency, increase return on investment, and increase

business performance (Woznica and Healy, 2009). Another finding indicates that external expertise is not associated with IT success (Delone, 1988). Small firms in Ghana usually process financial information by chartering accountants to handle their accounting information for management decision (Amidu *et al.*, 2011). Hence, technical support, training, and harmonious working relationship with consultants can reduce the risk of IT failure in small businesses.

AIS Implementation

The results of previous research suggest that AIS can affect the organizational performance. Soudani, (2012) who conducted a study in Dubai, found that AIS affects financial performance. The study collected the data through questionnaire from 74 firms as per listed companies at Dubai Financial Market (DFM) which is a subset of one of the forty ministries and autonomous agencies led by the federal government of United Arab Emirates.

PERFORMANCE MEASUREMENT

Various studies have attempted to explain the performance of SMEs in the two approaches, financial and non-financial (Delen *et al.*, 2013). This section will describe previous studies using both financial and non-financial approaches.

Financial Performance

Several studies used financial measurements to demonstrate the effectiveness of IT implementation for organizational performance. One of the studies using financial performance as measurement is Soudani (2012) who used ROA, ROE, debt in capital structure, left over, variable cost, and raw-material to measure firm performance. In Malaysia, Ismail and King (2005; 2006) used long term profitability, availability of financial resources, and sales growth to measure the financial performance of a firm. Boulianne (2007) stated that business unit performance is represented by three indicators: return on assets, net profit margin, and revenue growth. Burca *et al.*, (2006) used ROI and earnings before tax to measure the financial performance of a firm.

Non-financial Performance

Non-financial performance measurement is more appropriate than financial performance. This section will explain studies that use non-financial measurement in SMEs performance. According to Miller (1992), Bledsoe (1997), Abernethy and Lilis (1995), and Choe (2002) non-financial performance provides various strategic benefits such as quality improvement and shortens time needed in delivery. Tuanmat and Smith (2011) used non-financial performance to measure organizational outcome such as product availability, product quality, and sales service and support. Sousa *et al.* (2006) used productivity, customer satisfaction, and customer requirement to measure firms' performance. Similarly, Isobe *et al.* (2008) showed long term performance indicators such as new product and technological innovations.

CONCLUSION

This paper discusses previous researches which are related to the factors that might affect the successful implementation of AIS in SMEs. It also presents the results of studies that reveal the effect of AIS implementation on SMEs performance.

The internal validity in previous researches suggested that there are different methods of analysis and measurement of variables related to SMEs performance. Therefore, it can be analysed using a variety of analytical methods and different variable measurement, especially non-financial performance that is still limited in SMEs.

Based on the external validity, it can be concluded that the AIS implementation, especially in developing countries, still an interesting topic to be studied. Several findings in previous researches indicate that there is a research gap that seems to be interesting subject for the future discussion. Ismail and King (2007) explain that according to the IP theory, the high alignment of information technology will occur if the information requirement fit with the information capacity. The alignment of IT will improve organisational performance. Hussin (2002) show that technological characteristic has significant effect on IT alignment. While Choe (2002) stated that alignment of IT have significant effect on non-financial performance. Future studies could examine the direct relationship between the factors that effect of technology implementation such as technological characteristics, type of industry, and the type of strategy on AIS alignment. Furthermore, future research could examine the direct relationship between the AIS alignment with non-financial performance. There is an opportunity for researchers to examine the contingency theory to identify the direct or mediation effect between the factors affecting the IS implementation with non-financial performance. Hence, the association between IS alignment and non-financial performance is still open debated for the future research.

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Appendix-I

Authors	Sample	Object	Independent variable	Dependent variable	Result
Al-Eqab, Noor (2011)	220 firms	Jordanian companies	IT Sophistication, business strategy	AIS design	1. Managerial IT sophistication, informational IT sophistication and functional IT sophistication are more important than technological sophistication in influencing AIS design. 2. Cost leadership strategy was found to be more important than innovation differentiation strategy in influencing AIS design.
Burca, Brian, Teresa (2006)	231 owners	Ireland SMEs	Service practices, IT sophistication, service performance	Business performance	1. IT sophistication is moderating influence on the relationship between service practices and service performance. 2. There is positive relationship between service practices and service performance. 3. There is positive relationship between service performance and business performance.
Chang, David, Celeste, Wei (2012)	25 SMEs outsourcers	Outsourcing service provider in Taiwan	Capacity of professional skills, capacity of service, capacity of operation, external evaluation	IT outsourcing service providers	1. SMEs place a high value on the quality of product by outsourcing. 2. Expect new systems to operate smoothly and be compatible with other.
Choe (2002)	330 firms	Korean manufacturing firm	Level of technology	Non-financial performance	1. Level of technology has positive relationship with non-financial performance. 2. Although level of technology may be low, moderately large amount of information may be necessary for the improvement of performance.
Croteau, Raymond (2004)	104 CEOs	Canadian Firm	Strategic competencies, IT competencies, competencies alignment	Business performance	1. Strategic competencies and IT competencies has significant impact on competencies alignment. 2. Competencies alignment has significant impact on business performance.
Delone (1988)	93 owners	Australian SMEs	IS level, external programming, CEO knowledge, personal acceptance of computer, controls, longer use of computer, type of computers	Success of IS adoption	1. IS level, CEO knowledge, and control have positive relation on success of IS adoption 2. External programming, personal acceptance of computers, longer use of computers, computer training have no significant effect on success of IS adoption
Dibrell, Davis, Craig (2008)	397 owners	US SMEs	Innovation, IT investment	Financial, non-financial performance	1. Innovation has positive impact the prominence manager place on IT (IT investment). 2. The impact of innovation on performance is indirect, felt via the mechanism of the importance manager place on IT. 3. IT investment has positive relation to performance

Appendix-I

Authors	Sample	Object	Independent variable	Dependent variable	Result
Boulianne (2007)	88 managers	Canadian SMEs	Strategic, AIS	Financial performance	1. Prospector strategic and to lesser extent for defender strategic, broad-scope AIS is associated with higher performance. 2. Information needs of analyzer strategic differ from those defender units
Estebanez, Elena (2010)	632 owners	Spanish SMEs	IT accounting, number of year using IT, company's knowledge of AIS	Financial position, business management knowledge of technology, accounting and financial position	1. Manufacturing sector has a high level of short term IT implementation to deal with accounting and financial issues. 2. The service sector is using IT intensively and is also very interested in sophisticated IT
Hussin, King, Craig (2002)	256 owners	Malaysian SMEs	IT sophisticated, Owner commitment, external IT expertise	IT alignment	1. The IT alignment was related to the firm's level of IT maturity and the level of the owner's software knowledge. 2. The IT alignment was not related to the external IT expertise
Ismail, King (2005)	310 owners	Malaysian SMEs	AIS requirement, AIS capacity	Financial performance	1. The result indicates that a significant proportion of Malaysian SMEs had achieved high performance. 2. The group of SMEs with high AIS alignment had achieved better organizational performance than them with low alignment
Ismail, King (2006)	310 owners	Malaysian SMEs	AIS requirement, AIS capacity (AIS [illegible]nment)	Financial performance	1. The SMEs with highest level of alignment had better performance 2. Alignment does contribute to firm performance
Isobe, Makino, Montgomery (2008)	302 owners	Japan SMEs	Refinement capability, reconfiguration capability	Operational efficiency, strategic performance	1. Refinement capability relates more positively to operational efficiency than does reconfiguration capability. 2. Reconfiguration capability relates more positively to strategic performance than refinement [illegible]ability.
Levy, Powell, Yetton (2011)	27 CEOs	SMEs	Strategic positioning	Alignment IS	1. Benefit realization depends on alignment between IS and business strategy. 2. IS investment is frequently limited to supporting operations and transaction. 3. Organization with more sophisticated IS tend to perform less successfully than those with less complex systems.
Naranjo (2004)	112 CEOs	Spain Hospital	Sophisticated AIS, prospector strategy	Organizational performance	1. AIS Sophisticated has positive relation to prospector strategy. 2. Prospector strategy has positive relation to performance. 3. There is indirect effect of sophisticated AIS on performance, acting through a prospector strategy.
Salehi, Rostami, Mogadam (2012)	498 Firms	Financial managers of Iranian corporation	Accounting Information Systems (AIS)	Financial performance	1. Utilizing of AIS cause to increase financial performance. 2. Implementation of AIS leads to better prediction of corporations.

Appendix–I

Authors	Sample	Object	Independent variable	Dependent variable	Result
Sharma, Bhagwat (2003)	147 owners	Indian SMEs	Efficiency of IS function, competitive position, accuracy of information, downtime of IS, responsiveness of IS, timeliness of IS	Performance measurement of IS	1. SMEs who have implemented IS have achieved a considerable improvement in their operational efficiency of the IS function. 2. SMEs who have implemented IS have achieved significant reduction in there is downtime. 3. SMEs that have implemented IS have seen certain impact on their competitive position.
Sousa, Elaine, Guimaraes (2006)	52 owners	English SMEs	Financial, quality performance, training of employees, customer performance, innovation	Perception of the performance measurement systems	1. The model suggest that English SMEs report a higher use of performance measures if they use financial, quality performance, and training of employees measure 2. The negative relationship associated with the use of customer performance and innovation measures may not be perceived as performance measures
Soudani (2012)	74 firms	Dubai Financial Market	Accounting information systems (AIS)	Financial performance, performance management	1. AIS is very useful and have effect on organizational performance. 2. There is no relationship between AIS and performance management.
Thong (1999)	166 CEOs	Singapore SMEs	CEO characteristic, IS characteristic, organizational characteristic, environmental characteristic	Likelihood of IS adoption, extent of IS adoption	1. CEO characteristic, IS characteristic, organizational characteristic, are more likely to adopt IS. 2. CEO and innovation characteristic are important determinant of the decision to adopt, they not affect the extent of IS adoption. 3. The environmental characteristic has no direct effect on small business adoption of IS
Tuanmat, Smith (2011)	182 owners	Malaysian SMEs	Competition, manufacturing technology, strategy	Financial and no financial performance	1. Competitive environment and manufacturing technology has positive relationship with organizational strategy. 2. Organizational strategy has positive relationship on performance

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